CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

Available online at: http://www.iajps.com ***Research Article***

OCCURRENCE OF DYSLIPIDEMIA AND MICROALBUMINURIA AMONG RECENTLY DIAGNOSED HYPERTENSION CASES WITH RESPECT TO AGE & GENDER

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Article Received: March 2019 **Accepted:** April 2019 **Published:** May 2019

Abstract:

Objectives: *The objective of this research was to determine the occurrence of Dyslipidemia and Microalbuminuria among those patients who have recently been diagnosed as Hypertensive.*

Methodology: *This research was carried out at Mayo Hospital, Lahore from April 2017 to June 2018 on a total of 200 newly diagnosed hypertensive patients (both male and female) who were in the age bracket of 30 years to 50 years. The renal function test was normal among these patients (S/ Creatinine < 0.5 – 1.5 mg/dl). Patients were assessed for blood pressure, systolic pressure and diastolic pressure after being in a steady state for five minutes. First Krotokoff sound was considered as systolic blood pressure and the disappearance of the sound was considered as diastolic blood pressure. The calculation of Microalbuminuria was made with the estimation of Albumin within twenty-four hours of urine sample which was taken in sterilized bottles for the determination of Microalbuminuria occurrence among hypertensive patients. Serum Fasting lipid profile was taken after eight hours overnight fasting for the assessment of dyslipidemia among patients who were diagnosed or not diagnosed with Microalbuminuria.*

Results: *Majority of the patients (n = 76, 38%) were in the age range of 41 years to 45 years followed by 55 patients (27.5%) in the age range of 46 years to 50 years. The age bracket of 36 years to 40 years included 42 patients (21%); whereas, the least common age bracket of 30 years to 35 years included 27 patients (13.5%). The age of the patients was in the range of 30 – 50 years with a mean age of (38.65 ± 3.43) years. In total research sample of 200 patients, there were 117 males (57.5%) and 83 females (42.5%). Microalbuminuria frequency was found among 76 newly diagnosed hypertensive patients (38%); whereas, 124 patients (62%) did not present an onset of microalbuminuria. We found dyslipidemia in 73 patients (36.5%).*

Conclusion: *Newly diagnosed hypertensive patients presented a higher frequency of both dyslipidemia and microalbuminuria. Therefore, the treatment and management of both dyslipidemia and microalbuminuria are very much essential for newly developed hypertension among patients.*

Keywords: *Hypertension, Hypertensive, Frequency, Occurrence, Dyslipidemia, Microalbuminuria, Blood Pressure, Diastolic, Systolic and Renal Function.*

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Please cite this article in press Mahram Hosain et al., ***Occurrence of Dyslipidemia and Microalbuminuria among Recently Diagnosed Hypertension Cases With respect To Age & Gender.,*** *Indo Am. J. P. Sci, 2019; 06(05).*

INTRODUCTION:

Hypertension leads to an onset of cardiovascular diseases; its presence becomes even important in the presence of hyperlipidemia [1]. Normal twenty-four hours rate of urinary albumin excretion is twenty milligrams; whereas, a persistent rate from 30 to 300 mg per day refers to an onset of microalbuminuria. Increased risk of microalbuminuria leads to cardiovascular disease risks [2]. A research outcomes establish that microalbuminuria was present among 4.5% of patients having normal blood pressure, 6.3% among pre-hypertensive patients having blood pressure in the range of (120 – 139/80 – 89) mmHg, 12.4% among first stage of hypertension with a blood pressure reading as (140 – 159/90 – 99) mmHg, 25.3% among second stage of hypertension with a blood pressure range of (> 160/100) mmHg and 11.3% among those patients who were extended hypertension treatment therapy [3]. However, it was 54.8% more than the previously reported rates [4]. Microalbuminuria also works as a marker as it indicates systemic endothelial dysfunction which is the initial stage of the atherosclerotic process [5, 6]. Essential hypertensive patients and microalbuminuria patients also present onset of increased thickness of carotid artery wall, non-fatal myocardial infarcts, left ventricular hypertrophy and peripheral vascular disease; therefore, most of the ischemic heart disease occurrences are reported among patients with microalbuminuria [7]. Annual microalbuminuria screening is easy and simple to perform in the light of international disease management guidelines which need to be implemented in general day to day medical practice [8].

Hypertension due to Dyslipidemia increases the rate of mortality than dyslipidemia only or hypertension only [9]. An author reported 27.9% of cases of Hypercholesterolemia among hypertension patients and 66.3% Hypertriglyceridemia occurrence among hypertensive patients [1]. Dyslipidemia is more common than Microalbuminuria among recently diagnosed hypertensive patients with a respective proportion of 67.7% to only 23.10%. Another author reported dyslipidemia as 37.5% and microalbuminuria as 32.3% [10]. High TC and reduced HDL-c are common among indication among dyslipidemia among hypertensive cases who also have an onset of microalbuminuria [10]. Microalbuminuria regression has an association with 27% reduced CVD risk and progression of Microalbuminuria has an association with 65% increased risk [11].

The objective of this research was to determine the occurrence of Dyslipidemia and Microalbuminuria among those patients who have recently been diagnosed as Hypertensive. Therefore, the patient's identification by renal damage needs encouragement among all newly diagnosed hypertensive patients. We differ in dietary habits and lifestyle from other regions of the world so it needs different treatment. This research is an effort to estimate the burden of dyslipidemia and Microalbuminuria among hypertensive patients which will provide a platform for further studies.

METHODOLOGY:

This research was carried out at Mayo Hospital, Lahore from April 2017 to June 2018 on a total of 200 newly diagnosed hypertensive patients (both male and female) who were in the age bracket of 30 years to 50 years. The renal function test was normal among these patients as the value of S/ Creatinine was in the range of (< 0.5 – 1.5) mg/dl. Patients were assessed for blood pressure, systolic pressure and diastolic pressure after being in a steady state for five minutes. First Krotokoff sound was considered as systolic blood pressure and the disappearance of the sound was considered as diastolic blood pressure. The calculation of Microalbuminuria was made with the estimation of Albumin within twenty-four hours of urine sample which was taken in sterilized bottles for the determination of Microalbuminuria occurrence among hypertensive patients. Serum Fasting lipid profile was taken after eight hours overnight fasting for the assessment of dyslipidemia among patients who were diagnosed or not diagnosed with Microalbuminuria.

RESULTS:

Majority of the patients (n = 76, 38%) were in the age range of 41 years to 45 years followed by 55 patients (27.5%) in the age range of 46 years to 50 years. The age bracket of 36 years to 40 years included 42 patients (21%); whereas, the least common age bracket of 30 years to 35 years included 27 patients (13.5%). The age of the patients was in the range of 30 – 50 years with a mean age of (38.65 ± 3.43) years. In total research sample of 200 patients, there were 117 males (57.5%) and 83 females (42.5%). Microalbuminuria frequency was found among 76 newly diagnosed hypertensive patients (38%); whereas, 124 patients (62%) did not present onset of microalbuminuria. We found dyslipidemia in 73 patients (36.5%).

Detailed outcomes have been presented in Table – I (Age Distribution), Table – II (Gender Distribution

and Table – III (Microalbuminuria and Dyslipidemia (Presence and Frequency)).

Table – I: Age Distribution

Age	Number	Percentage
30 – 35 Years	27	13.5
36 – 40 Years	42	21
41 – 45 Years	76	38
46 – 50 Years	55	27.5
Total	200	100
Mean ± SD	38.65 ± 3.43	

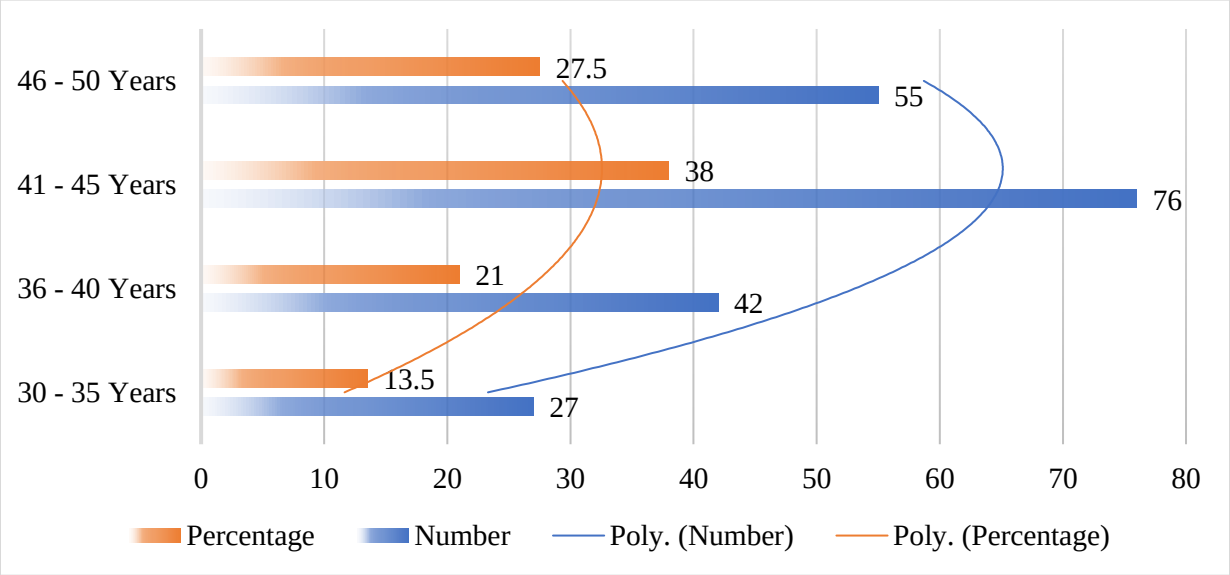


Table – II: Gender Distribution

Gender	Number	Percentage
Male	117	57.5
Female	83	42.5
Total	200	100

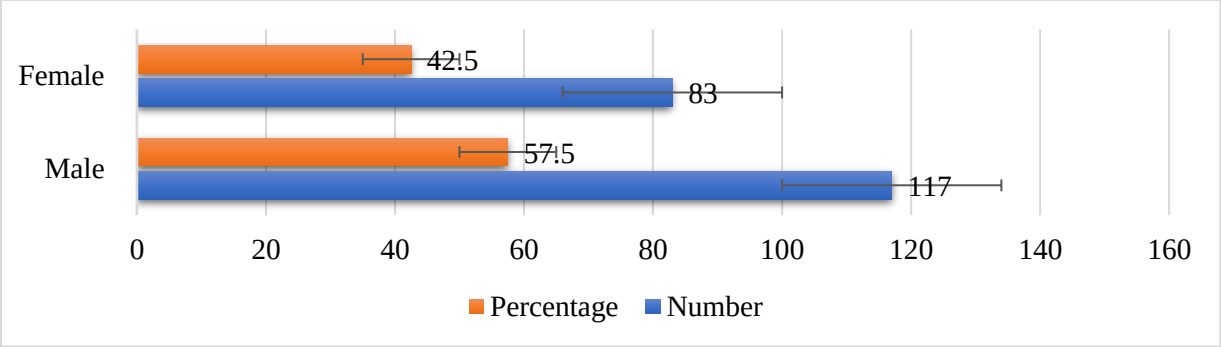
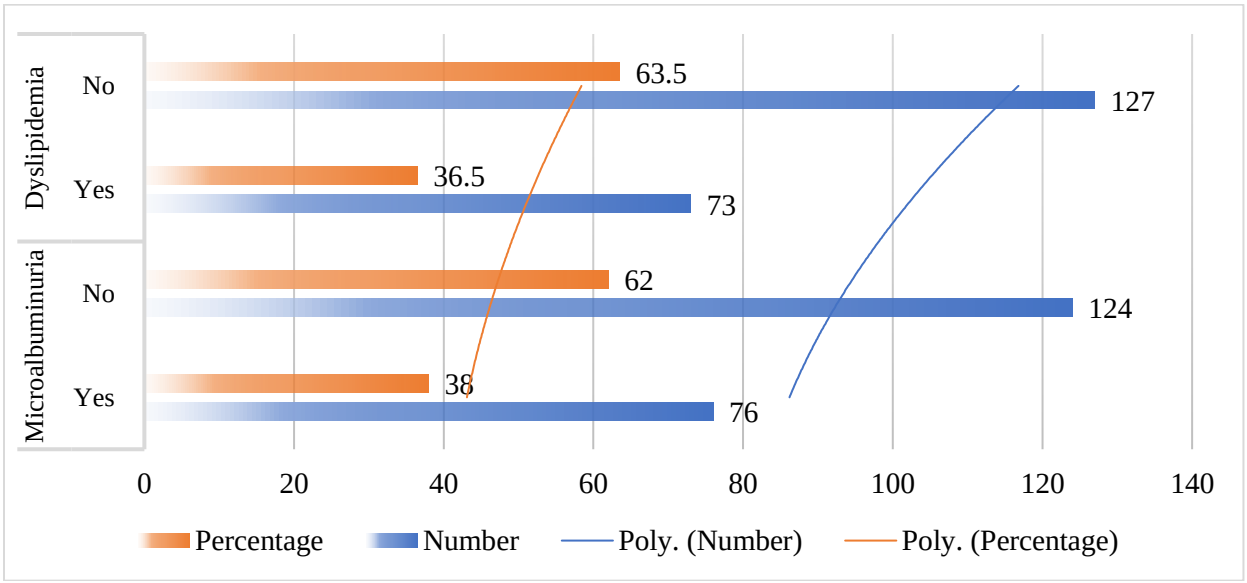


Table – III: Microalbuminuria and Dyslipidemia (Presence and Frequency)

Frequency & Presence		Number	Percentage
Microalbuminuria	Yes	76	38
	No	124	62
Dyslipidemia	Yes	73	36.5
	No	127	63.5



DISCUSSION:

The most dominant age group for dyslipidemia and microalbuminuria was from 41 years to 45 years as 73 patients (36.5%) had dyslipidemia and 76 patients (38%) had microalbuminuria. In the total population, there were 117 males (57.5%) and 83 females (42.5%). The prevalence of Microalbuminuria, as reported by Akinsola was less than our outcomes (38%) [12]. Other studies found it in the range of 4.7% to 40% [13 – 17]. This difference may have a correlation with the patient's selection process, hypertension duration, previous antihypertensive treatment and estimation method [18 – 19].

Patients having hypertension with microalbuminuria present a higher level of TC serum, AI and LDL cholesterol along with reduced HDL serum and its counterparts. There was a positive and significant association of LDL and TC serum with an onset of Microalbuminuria among patients; whereas, a negative correlation with HDL serum. It is in agreement with previous studies which show the

association of dyslipidemia and microalbuminuria with increased blood pressure and CVD events [20 – 23]. Busari also reported similar outcomes as he reported a 37.5% rate of dyslipidemia and 32.3% rate of microalbuminuria [11].

There is an increased chance of microalbuminuria among recently diagnosed hypertensive patients along with dyslipidemia. This fact has also a strong relationship to cardiovascular events and associated complications. Therefore, the patient's identification by renal damage needs encouragement among all newly diagnosed hypertensive patients.

CONCLUSION:

Newly diagnosed hypertensive patients presented a higher frequency of both dyslipidemia and microalbuminuria. Therefore, the treatment and management of both dyslipidemia and microalbuminuria are very much essential for newly developed hypertension among patients.

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